

Work Order ID 129448

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129448

Page 1

Item ID: D119-796-241

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 2/27/15 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: W Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr.	Revision Nbr								
D119-796-241	C/R E	A.P. 15-02-09							

120 Packaging 0.00

120 Packaging Memo 0.00

Packaging

130 BENDING MACHINE - CROSSTUBES 0.00

130 CNC Bend 2 Memo 0.00

CNC Alpha 160 Bender Bend tube as per Dwg D119-796-241 using CNC bender program

JW 15-02-10

140 QC15- Crosstube Dimensional Check 0.00

140 QC Memo 0.00

Quality Control

D 15-02-11 DD

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
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 Start Date: 2/09/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/27/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Crosstubes	0.00							
150									
Crosstubes	Memo	0.00							
Crosstubes	***** ENSURE PROPER JIG POSITIONING *****								
	1-Cut tube as per inspection dwg and deburr ends. ***ensure saw is square***								JW 15-02-11
	2-Position cuffs on tube ensure proper positioning								
	3-Drill tube as per dwg using DT _____ location #7 & # 212 ULF using jig DT _____ and DT _____ as per QSI 10								JW 15-02-11
	4-Identify cuff position and Batch # on each and identify tube as per dwg D119-796-241.								
	5- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect surface damage								JW 15-02-12
	6- Deburr and realodine cuff.								
160	QC5- Inspect part completeness to step on W/O	0.00							
160									
QC	Memo	0.00							
Quality Control	*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***								

DAS
38
9-89

DAS
38
9-89

15-02-17

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Item ID: D119-796-241

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N900040100Setup Start ***NS1***

Revision ID:

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Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 2/27/15 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170		0.00							
170									DAS
HandFXtube	Memo	0.00				1			41
Hand Finishing Crosstubes	*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***								9-89
	1- CLEAN CROSSTUBE WITH WASH'N WIPE								15-2-17
180	Outsource process - NDT per QSI038 4.1	0.00							
180									
Outsource2	Memo	0.00							
Outsource process - NDT	*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***								
	Liquid Penetrant Inspection as per QSI 038Or								
	Issue P/O: 27452 LPI as per ASTM 1417								
	Level 2 Attach copy of NDT results to work order								
190		0.00							
190	Packaging								
Packaging	Memo	0.00							
Packaging	Ensure copy of NDT results attached to work order.								

CL 15/02/17 ①

IX SP 15-02-17

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Item ID: D119-796-241

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 2/27/15 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 *200* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D119-796-241	0.00 0.00				1			DAS 38 9-89 FEB 20 2015
210 *210* HandFXtube Hand Finishing Crosstubes	Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1- PRESSURE WASH AND THEN USE WASHH'N WIPE TO CLEAN CROSSTUBE BEFORE CHEMICAL CONVERSION	0.00 0.00				BL		15/02/17	
220 *220* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	0.00 0.00				1			EB 15-02-20

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Item ID: D119-796-241 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)
 Start Date: 2/09/15 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 2/27/15 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	SprayPaint	0.00							
230									
SprayPaint	Memo	0.00							
Spray Painting	*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***								
	1-Prime inside and outside crosstube as per QSI 005 4.2								
	PRIMER batch: 130128								
	Start time: 4:00								
	Finish time: 5:00								
	130762								
240	QC14- Inspect Spray Paint	0.00							
240									
QC	Memo	0.00							
Quality Control									

1 _____ CN 15-02-20

45 15-02-25

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
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 Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)
 Start Date: 2/09/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/27/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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242

0.00

242

Crosstubes

Crosstubes

Memo

0.00

1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg

05152-043

2- Install ~~DT10112~~ with proseal 890 on concave surface, 0.100" MIN thick as per dwg USE DT10112 TO LOCATE

Proseal Batch:

130 986

EXP:

PROSEAL CURE TIME 72 HOURS:

Start: **15-02-24**

Finish: **15-02-27**

3- Install radius block as per dwg

4- Mask underside of crosstube as shown as per dwg prior to painting.

244

QC5- Inspect part completeness to step on W/O

0.00

244

QC

Quality Control

Memo

0.00

inspected
with jig.
DT10089
10112

① 15-03-16

DAS
9
2-89

CA 1502128

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Item ID: D119-796-241

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/27/15 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

246

Spray Painting per QSI005 4.2

0.00

246

SprayPaint

Memo

0.00

1- Paint outside crosstube as per QSI 005 4.2

PAINT batch: 131669Start Time: 10:00Finish Time: 11:30

2- Remove masking and apply matte clear coat as per dwg

Matte Clear Batch: [Signature]1 CX150316

248

QC14- Inspect Spray Paint

0.00

248

QC

Memo

0.00

Quality Control

DAS

38

9-89

1

APR 14 2015

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)
 Start Date: 2/09/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/27/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	Crosstubes	0.00							
250									
Crosstubes	Memo	0.00							
Crosstubes	Assemble as per Dwg D119-796-241								
	1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg								
	2- Install center support with the proper position as per dwg with Scotch Weld QSI 015								
	A/R SCOTCH WELD BATCH: <u>131539</u>								
	EXP: <u>2116</u>								
	CURE TIME 24H:								
	Start: <u>15-03-29</u>								
	Finish: <u>15-03-01</u>								
	3- Install Damper Supports and Contact Pad , clamp with the proper position as per dwg with Proseal 890 per dwg D119-796-241 and QSI 015								
	*****INSTALL WET*****								
	A/R Proseal 890 Batch: <u>131670</u>								
	EXP: <u>16115</u>								
	PROSEAL CURE TIME 72 HOURS:								
	Start: <u>15-03-20</u>								
	Finish: <u>15-04-02</u>								

Torque all clamps to 80-100 IN-LBS.

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Item ID: D119-796-241

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/27/15 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

260

QC

Memo

0.00

Quality Control

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED AS
PER DWG.***

DAS

38

9-89

APR 14 2015

270

Pick Kit

0.00

270

Packaging

Memo

0.00

Packaging

280

QC4- 100% Inspect kits for completeness

0.00

280

QC

Memo

0.00

Quality Control

PPP131324. 15-4-15

NF 15-4-15

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Accept

Setup Start *NS1*

Stop *NS2*

Start Date: 2/09/15 **Start Qty:** 1.00 *** 1 ***

Cust Item ID:

Required Date: 2/27/15 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run	Start	*NR1*
	Stop	*NR2*

[illegible]

290

0,00

290

Packaging

0.00

Packaging

Memo

Packaging

Identify and pack for shipping as per PPP D119-796-241

DAS

46

40

~~APR 21 2015~~

300

QC21- Final Inspection - Work Order Release	0.00
---	------

300

QC

Memo	0.00
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Quality Control

MLJ 1504-21

MLS 1504-21

Picklist Print

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Work Order ID: 129448

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Parent Item: D119-796-241

D119-796-241

Parent Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15

Required Date: 2/27/15

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM IPP
REV:B 14.10.15 AS PER REV.B DD VERF:JLM IPP REV:C
14.11.19 AS PER REV.C DD VERF:JLM IPP REV:D 14.12.12
AS PER REV.pd1 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
CR3212-4-07 *CR3212-4-07* CHERRY RIVET		Purchased	No				Each	215.0000		16	DAS 41 9-89	15-2-22	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST320				215					
				m126320				15					
				m131317				200		16			
D2873-043 *D2873-043* Nut Plate Assembly		Manufactured	No				Each	4.0000		4	DAS 41 9-89	15-2-22	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG052				4					
				125127				4					
D5123-5 *D5123-5* Clamp Cushion		Manufactured	No				Each	44.0000		2	DAS 41 9-89	15-4-9	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				lg55				44					
				126748				40		2			
				127134				4					

Picklist Print

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Work Order ID: 129448

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Parent Item: D119-796-241

D119-796-241

Parent Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15

Required Date: 2/27/15

Start Qty: 1.00

Required Qty: 1.00

D5134-041

Manufactured No

Each

7.0000

1

D5134-041

Damper Support Assembly, LH

CR 15 03-32

Location

Loc Qty

Loc Code

LG54

6

126750

6

prelim

1

124071

1

D5134-042

Manufactured No

Each

5.0000

1

D5134-042

Damper Support Assembly, RH

CR 15 03-30

Location

Loc Qty

Loc Code

LG014

1

124072

1

LG054

4

126751

4

D5150-3

Manufactured No

Each

13.0000

2

D5150-3

Step Post

DAS
41
9-89

15-3-9

D5152-043

AFT POSTMOUNT ASSY

A.P
15.02.07

Location

Loc Qty

Loc Code

prelim

13

124085

5

127171

8

D119-796-241TRN

Manufactured No

Each

3.0000

1

D119-796-241TRN

Crosstube Turning Detail

129811

Location

Loc Qty

Loc Code

LG014

3

126941

1

126944

1

126945

1

BL 15/02/10

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Shop Packet Print

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Picklist Print

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Parent Item: D119-796-241

D119-796-241

Parent Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15

Required Date: 2/27/15

Start Qty: 1.00

Required Qty: 1.00

D5122-1

Manufactured No

Each

12.0000

1

D5122-1

Center Support, Upper

**

CA 15-03-29

Location

Loc Qty

Loc Code

LG054

11

126745

11

prelim

1

122440

1

Each

108.0000

6

**

CA 15-03-29

D5123-1

Manufactured No

D5123-1

Clamp Cushion

Location

Loc Qty

Loc Code

lg55

106

126746

96

127132

10

prelim

2

115257

2

Each

12.0000

1

**

DAS

41

9-89

15-4-9

D5136-1

Manufactured No

D5136-1

Contact Pad, LH

Location

Loc Qty

Loc Code

LG051

12

126752

12

Each

13.0000

1

**

DAS

41

9-89

15-4-9

D5136-2

Manufactured No

D5136-2

Contact Pad, RH

Location

Loc Qty

Loc Code

LG051

1

123799

1

LG055

12

126753

12

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Shop Packet Print

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Picklist Print

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Work Order ID: 129448

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Parent Item: D119-796-241

D119-796-241

Parent Item Name: Aft Crosstube, STD w/o Peg Steps (MKII)

Start Date: 2/09/15

Required Date: 2/27/15

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

Each

63.0000

6

MS21920-25

Clamp

CR 15-03-30

6

Location

Loc Qty

Loc Code

FG

10

120920

10

LG050

53

M130400

13

M131367

40

MS21920-28

Purchased

No

Each

101.0000

2

MS21920-28

Clamp

CR 15-03-29

2

Location

Loc Qty

Loc Code

FG

1

105884

1

LG050

100

M130400

50

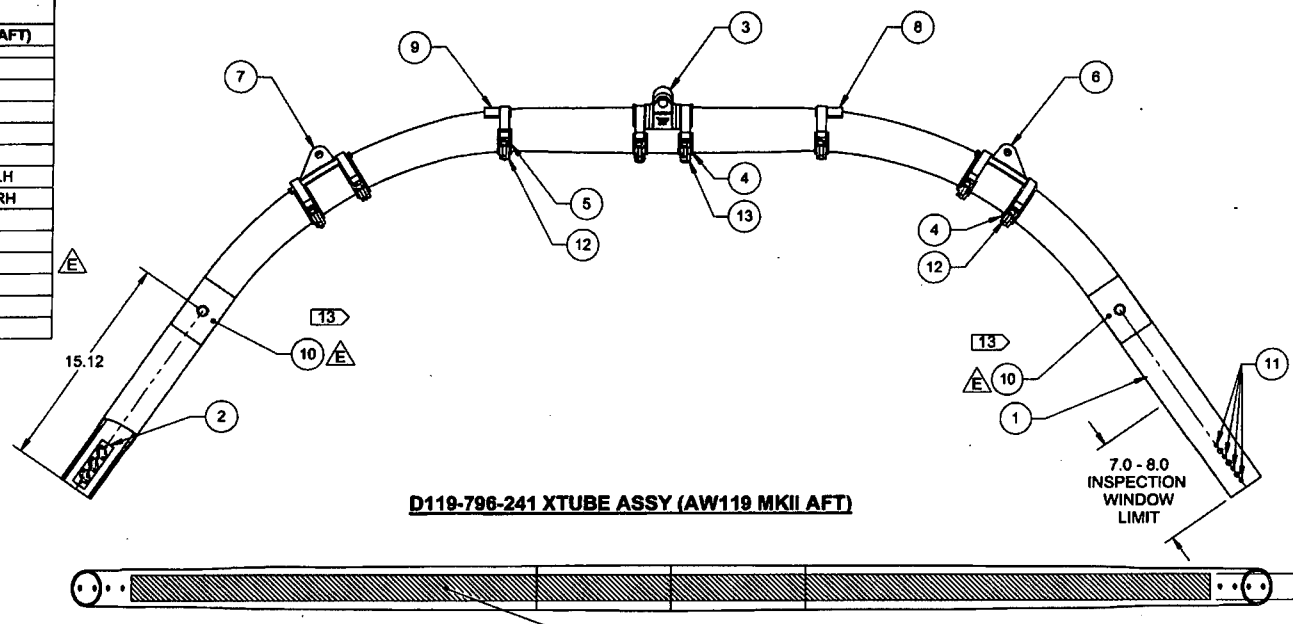
M130665

12

M131367

38

ITEM	QTY	P/N	DESCRIPTION
	X	D119-796-241	XTUBE ASSY (AW119 MKII AFT)
1	1	D119-796-241BND	CROSSTUBE, AFT
2	4	D2873-043	RADIUS BLOCK
3	1	D5122-1	CENTER SUPPORT
4	6	D5123-1	CLAMP CUSHION
5	2	D5123-5	CLAMP CUSHION
6	1	D5134-041	DAMPER SUPPORT ASSY, LH
7	1	D5134-042	DAMPER SUPPORT ASSY, RH
8	1	D5136-1	CONTACT PAD, LH
9	1	D5136-2	CONTACT PAD, RH
10	2	D5152-043	AFT POST MOUNT ASSY
11	16	CR3212-4-07	RIVET, BLIND CSK
12	6	MS21920-25	CLAMP
13	2	MS21920-28	CLAMP



D119-796-241 XTUBE ASSY (AW119 MKII AFT)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: MASK UNDERSIDE OF CROSSTUBE AS SHOWN (B3-1, HATCHED AREA) PAINT OUTSIDE PER DART QSI0054-2 REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY USING PART NUMBER 'D119-796-241' AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 6.4
- 7) WEIGHT: 26.26 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) INSTALL D5122-1 CENTER SUPPORT AT 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER DP460 HAS CURED FOR 24 HOURS.
- 10) AFTER FINISHING, ABRASE MATING SURFACES OF D5136-1/2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5136-1/2 CONTACT PADS AND INSTALL AT AN 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL MS21920-25 CLAMPS AND D5123-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 11) TORQUE MS21920 CLAMPS 80 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY. THE NUT HAS NOT BOTTOMED-OUT AFTER TORQUING AND THE NUT IS FACING AFT.
- 12) AFTER FINISHING, POSITION AND INSTALL D5134-041/-042 DAMPER SUPPORTS USING JIG DT10085. ABRASE MATING SURFACES OF THE D5134-041/-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041/-042. INSTALL MS21920-25 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D5152-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. INSTALL D5152-043 WITH LAYER OF PROSEAL 890 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK LOCATE D5152-043 USING TOOL DT10112.

1. APPLY PRIMER
2. APPLY CLAR COAT
3. MASK & APPLY FINISH COAT
A.P.
15.02.23

MASK AREA PRIOR TO PAINTING
REMOVE MASKING AFTER PAINTING
AND APPLY CLEAR COAT

2015 FEB 09

ECN 15-516 4

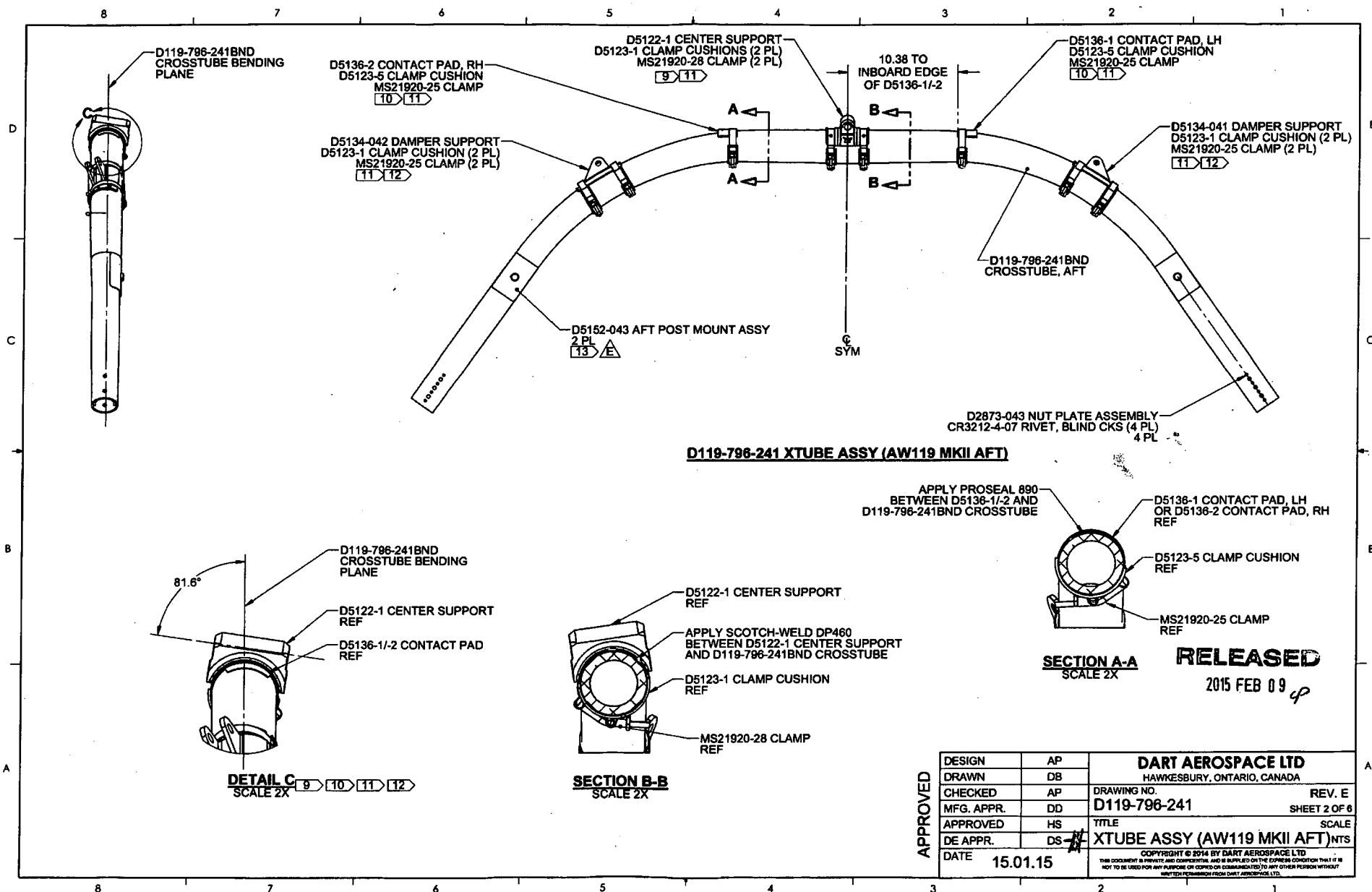
E	D5152-043 WAS D5150-3, SCOTCH BRITE 7447 RED WAS 180 GRIT SANDPAPER	DB	15.01.15
D	ADD D5150-3 STEP POST (2X), MOVED INSPECTION WINDOW DETAIL TO SHT 1, MODIFIED NOTES ON SH 1&3	DB	14.11.25
C	CR3212-4-07 RIVETS WAS CR3212-4-05 RIVETS, RADIUS BLOCK WAS NUT PLATE ASSEMBLY (BOM), REMOVED 7.5 DEG CUFF HOLE OFFSET (A1-3), REDUCED CUFF DIA TO 2.500 (C8-5), ADD INSPECTION WINDOW	AP	14.10.23
B	ORIENTATION OF D5122-1 CENTER SUPPORT WAS CORRECTED. D5123-5 ADDED UNDER D5136-1/2 CONTACT PADS. ADDED D2873-043 NUT PLATE ASSY & CR3212-4-05 RIVETS. ADDED REFERENCE TO SKIDTUBES FOR LOCATING CUFF HOLES. RE-ORGANIZED NOTES, REMOVED REDUNDANT INFORMATION.	AP	14.09.08
A	NEW ISSUE	AP	14.08.07
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	DD	D119-796-241	SHEET 1 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
DATE	15.01.15	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

• INSTALL D5152-043 AFTER APPLYING CLEAR COAT, PRIOR TO FINISH COAT

• INSTALL ~~D5122-1~~ D5122-1 CENTER SUPPORT AFTER FINISH COAT

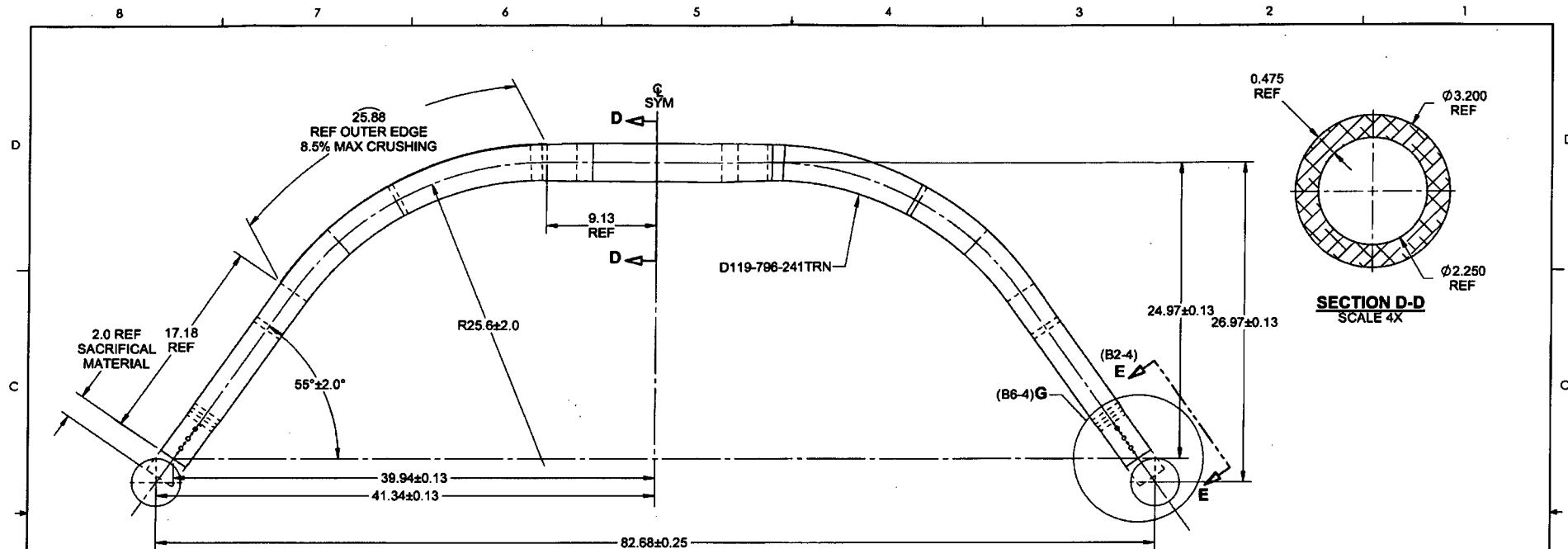
A.P.

15.02.23



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2015 FEB 09



D119-796-241BND CROSSTUBE, AFT 9
BENDING AND DRILLING DETAIL

NOTES:

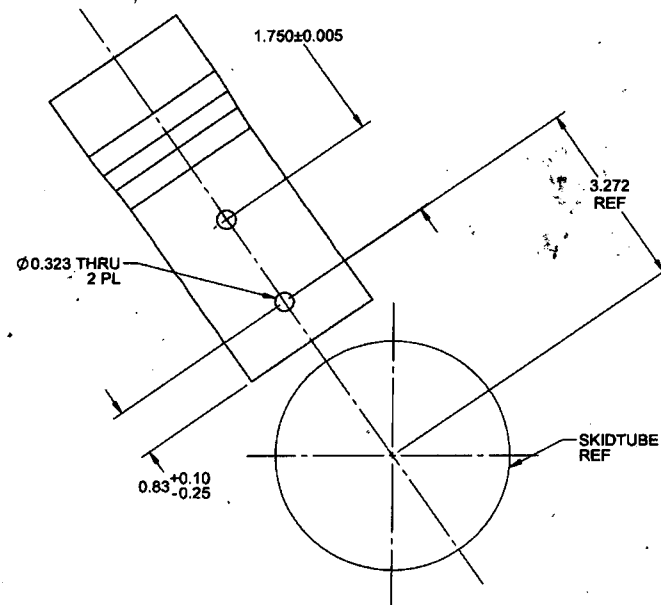
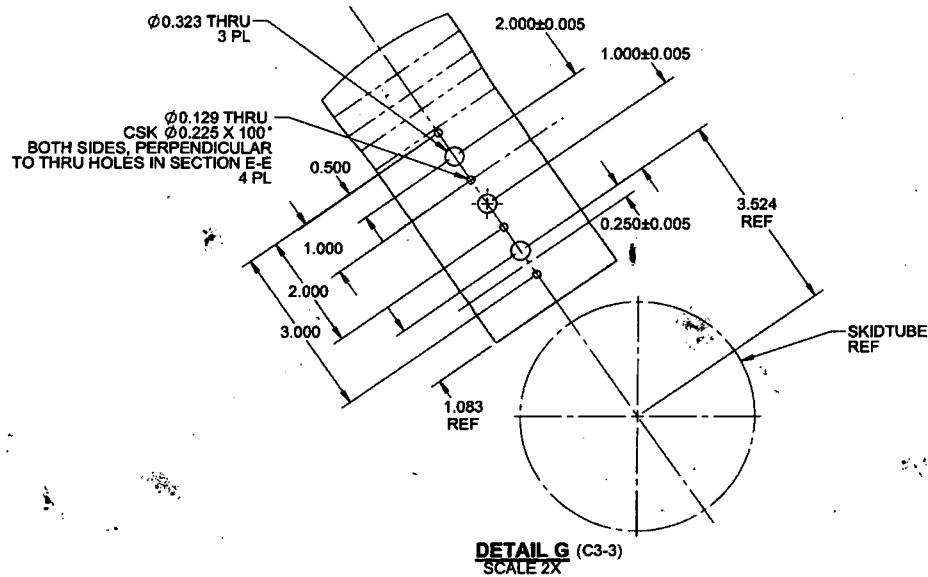
- 1) MATERIAL: MAKE FROM D119-796-241TRN
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 24.09 lbs
- 8) PART IS SYMMETRICAL ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8.5% BASED ON OD.
- 10) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

RELEASED

2015 FEB 09

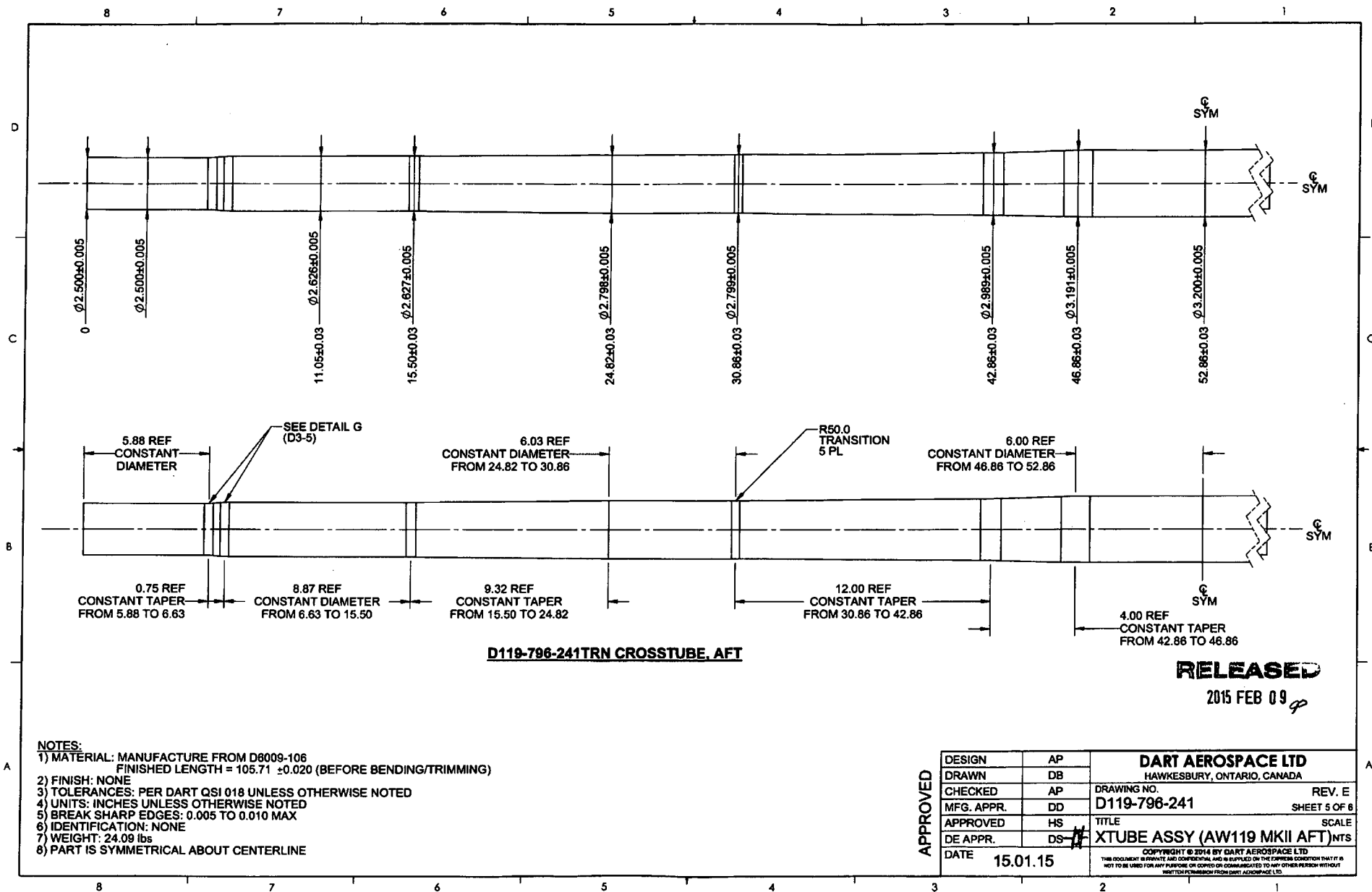
APPROVED

DESIGN	AP	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	DD	D119-796-241	SHEET 3 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT) NTS	
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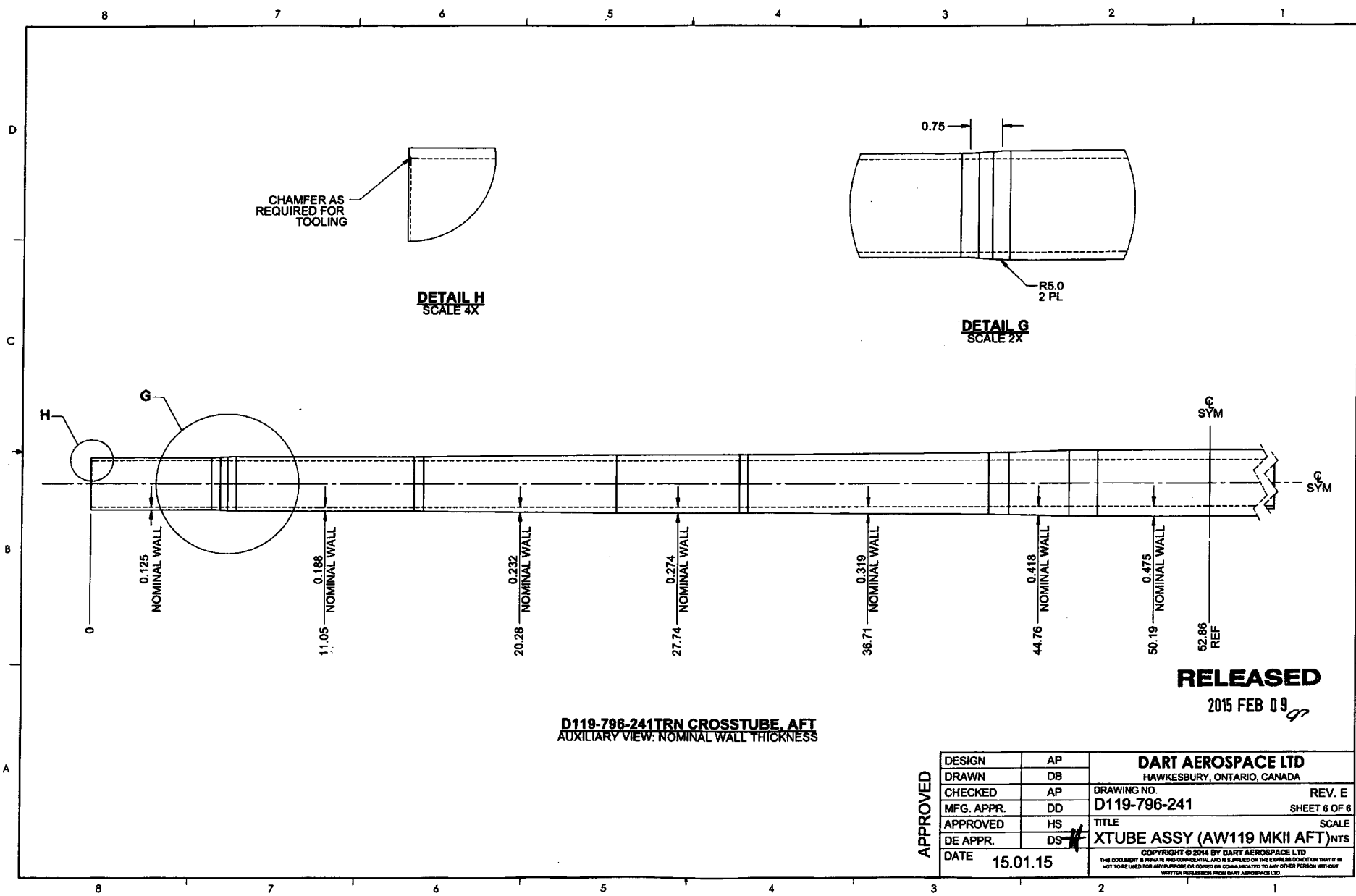


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2015 FEB 09

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	MFG. APPR.	DD	D119-796-241	SHEET 4 OF 6
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
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	DRAWN	DB		
	CHECKED	AP	DRAWING NO.	REV. E
	MFG. APPR.	DD	D119-796-241	SHEET 5 OF 6
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT) NTS	
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D119-796-241TRN CROSSTUBE, AFT
AUXILIARY VIEW: NOMINAL WALL THICKNESS

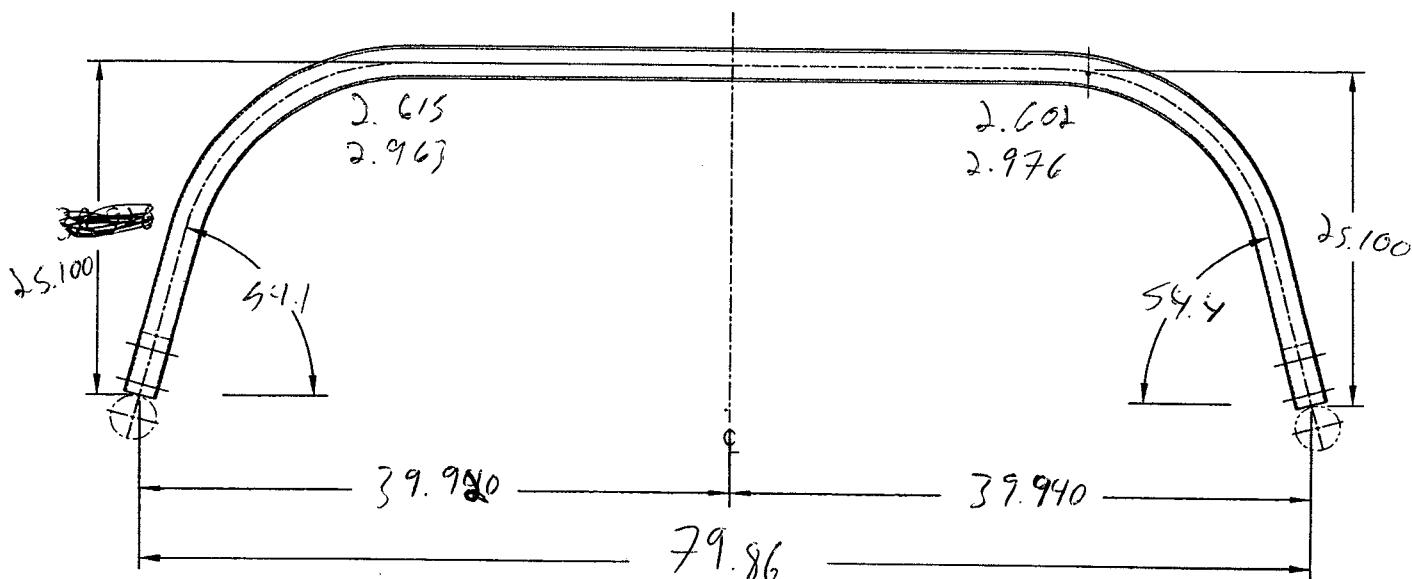
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2015 FEB 09

APPROVED	DESIGN	AP	DART AEROSPACE LTD	
	DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	AP	DRAWING NO.	REV. E
	MFG. APPR.	DD	D119-796-241	SHEET 6 OF 8
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT) NTS	
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DART AEROSPACE LTD		Work Order:	129448
Description:		Part Number:	119-796-241
Inspection Dwg:	Rev:	Page 1 of 1	

Required Dimension	Min	Max
Height	24.84	25.100
1/2 Span	40.070	39.810
Angle	53	57
Total Span		
Bending Passes	8	
Crushing		8.5%



	Side A	Side B
Bending Passes	(11)	(11)
Crushing	6.2%	6.7%
Comments		

DAS
9
9-89

QC15 Inspection	
Date	15-02-11

Rev	Date	Change	Revised by	Approved
A		New Issue		
B	06.09.19	Reformat; QC level revised	KJ/JM	
C	07.02.06	Reformat	KJ/JM	
D	12.02.15	Added bending passes and crushing	KJ	
E	12.03.07	Revised comments table	KJ	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO27452**

Purchase Order Date 2/17/2015

PO Print Date 2/17/2015

Page Number 2 of 3

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$175.00

3	129447	D119-796-141 CROSSTUBE	2/17/2015	1.00	\$175.00	\$175.00
---	--------	---------------------------	-----------	------	----------	----------

Yes
2/17/2015

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$175.00

4	129448	D119-796-241 CROSSTUBE	2/17/2015	1.00	\$175.00	\$175.00
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Yes
2/17/2015

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$175.00

5	129312	D119-796-241 CROSSTUBE	2/17/2015	1.00	\$175.00	\$175.00
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Yes
2/17/2015

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Note:

2/17/2015

SP15-02-H



skyservice
Air travel. Evolved.

NDT Work Order

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: YYZ
70313

Customer: DART DECUSCA Dept: NDT YYZ

Reference: 27452

Make:

Model:

Reg:

A/C S/N:

TSN:

CSN:

TSO:

Tail#:

Task: ☐ Scheduled ☐ Unscheduled ☐ A.O.G. ☒ P.T. ☐ M.T. ☐ E.T. ☐ U.T. ☐ R.T.

Work Required:

CARRY OUT NDT ON THE FOLLOWING CROSS TUBES:

- 1) ITEM ID = D119-796-141 FWD CROSS TUBE W.O.# 129447
- 2) ITEM ID = D119-796-141 FWD CROSS TUBE W.O.# 129310
- 3) ITEM ID = D119-796-241 AFT CROSS TUBE W.O.# 129312
- 4) ITEM ID = D119-796-241 AFT CROSS TUBE W.O.# 129448

Action Taken:

Date:

Initial/Stamp:

LIQUID PENETRANT INSPECTION

JAW ASTM E1417-M13 CARRIED

17 FEB 2015



OUT ON ITEMS LISTED ABOVE.

NO CRACKS FOUND

SP/SCA

BLACK LIGHT = T-20990N

PENETRANT = ARDROX 970 FZSE

BATCH#

02312131

I certified that the maintenance described above has been performed with the applicable standard of airworthiness.

Signature:

Name:

GARY SMITH

ACA/SCA Stamp



Date:

17 FEB
2015

DCA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>129448</u> Part No. <u>D119-796-241</u> NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Operator ☐ Offset/Setup ☐ Process ☐ Supplier ☐ Training ☐ Transport ☐ Unapproved ☐	15/2/18		1	Instruction for applying clear-coat window does not match actual process.	DAS 12 8-89 15/2/18	Acceptable to apply clear coat prior to white paint.	DAS 12 8-89 15/2/18		

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge		
☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock/Pulled ☐ Other		